

What is claimed is:

1. A method of coating a substrate, comprising:  
providing a substrate having a surface;  
forming a polymeric layer on the surface of the substrate by applying a layer of a polymeric precursor to at least a portion of the surface;  
polymerizing the polymeric precursor to form a polymerized layer; and  
applying a metal coating to at least a portion of the polymerized layer;  
wherein the metal coating is applied under sub-atmospheric conditions.
2. The method of claim 1, wherein the step of applying the layer of the polymeric precursor is performed using an electrophoresis process.
3. The method of claim 2, wherein the step of forming the polymerized layer includes elevating the temperature of the polymeric precursor to a temperature of at least about 320°F.
4. The method of claim 2, wherein the polymeric precursor is selected from the group consisting of acrylics, epoxies, urethanes, and combinations thereof.
5. The method of claim 1, wherein the substrate is porous, and further comprising leveling the surface of the substrate before the step of applying the metal coating.
6. The method of claim 5, wherein the metal coating is applied using a physical vapor deposition method.

1           7.     The method of claim 6, further comprising the step of removing a  
2     portion of the polymerized layer before applying the metallic coating.

1           8.     The method of claim 7, further comprising cleaning at least the  
2     polymerized layer before the step of removing a portion of the polymerized layer.

1           9.     The method of claim 6, wherein the metal coating is applied in a  
2     pressure range of about  $5 \times 10^{-4}$  millitorr to about  $2 \times 10^{-5}$  millitorr.

1           10.    The method of claim 6, wherein the metal coating is applied by  
2     evaporation.

1           11.    The method of claim 3, further comprising maintaining the polymeric  
2     precursor at the temperature for at least about 12 minutes.

1           12.    A method of coating a surface, comprising:  
2     providing a substrate;  
3     coating at least a portion of the substrate with a layer of an  
4     electrophoretically applied polymeric precursor;  
5     polymerizing the polymeric precursor to form a first polymeric coating;  
6     and  
7     elevating the temperature of the polymeric coating to at least about  
8     400°F for at least about 6 minutes.

1           13.    The method of claim 12, further comprising applying a layer of metal  
2     over at least a portion of the polymeric coating.

1           14.    The method of claim 13, further comprising applying a second  
2     polymeric coating over the layer of metal.

1           15.    A method comprising:  
2                forming a polymeric coating from an electrophoretically applied  
3 polymeric precursor and applying a layer of metal over the polymeric coating using  
4 a physical vapor deposition process.

1           16.    An article having a porous surface, comprising:  
2                an electrophoretically applied first polymeric layer overlaying and in  
3 direct contact with the porous surface; and  
4                a metallic layer overlaying the first polymeric layer.

1           17.    The article of claim 16, further comprising:  
2                a second electrophoretically applied polymeric layer overlaying and in  
3 direct contact with the metallic layer.

1           18.    The article of claim 16, wherein the article is selected from the group  
2 consisting of plumbing fixtures, jewelry, and utensils.

1           19.    The article of claim 17, wherein the article is selected from the group  
2 consisting of plumbing fixtures, jewelry, and utensils.

1           20.    The article of claim 16, wherein the polymeric layer is a dielectric  
2 layer.

1           21.    The article of claim 16, wherein the metallic layer is chrome.

1           22.    The article of claim 16, wherein the first polymeric layer has a  
2 thickness ranging from about 1 millimeter to about 40 millimeters.

23. The article of claim 16, wherein the metal layer has a thickness ranging from about 0.1 millimeter to about 3 millimeters.

24. The article of claim 23, wherein the second polymeric layer has a thickness ranging from about 1 millimeter to about 40 millimeters.